Signage as an Intervention on a General Medicine Ward to Reduce Unnecessary Testing

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ABSTRACT

Background: Up to 30% of medical spending in developed countries offers no benefit to patient care. Unnecessary testing is not only wasteful economically, but can be injurious to patients. Previous studies have shown that interventions such as education, auditing, and restrictive ordering can reduce unnecessary testing. However, these interventions are time- and resource-intensive. We conducted a study to determine if the passive intervention of placing signs on clinicians' computers was effective in reducing unnecessary testing.

Methods: We identified two acute internal medicine wards at an academic tertiary care center on which all orders are placed via computer. On one ward (Ward A), we placed a sign outlining recommendations regarding responsible test-ordering. The other ward (Ward B) acted as a control. Data from Ward A the previous year acted as a historical control. Data was collected for each patient admitted during the 6-month study period to determine whether test-ordering practices differed between the two wards.

Results: A total of 1645 patients accounting for 17,786 patient-days were included in the study. During the study period, fewer tests were ordered on Ward A than Ward B (7.38 vs 8.20 tests/patient-day; p<0.01). Additionally, significantly fewer patients on Ward B received ≥1 complete blood count/day (36.1% vs 42.5%, p=0.04). Similar, although less robust, results were

found when comparing Ward A to the historical control. This effect was most pronounced among patients admitted for 7-30 days.

Interpretation: In our study, the passive, easily-implemented, cost-negligible intervention of placing signs on clinicians' computers outlining recommendations for responsible test-ordering significantly reduced unnecessary testing.

FIGURES

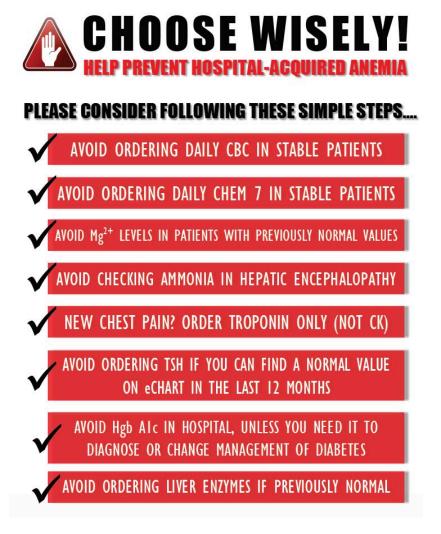


Figure 1. The sign that was placed on all clinician computers on Ward A during the study period, containing various evidence-based recommendations regarding responsible test-ordering practices.

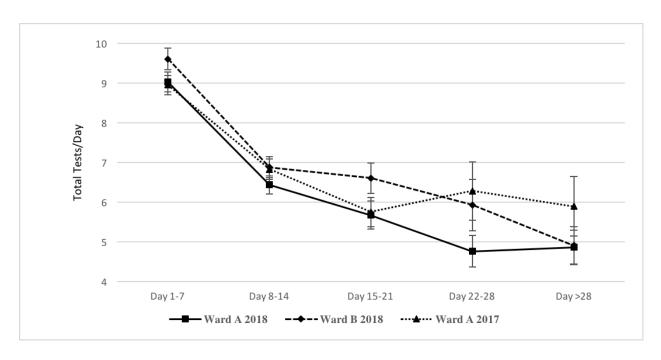


Figure 2. Reductions in total tests/patient-day were noted in patients admitted >8 days for patients admitted to Ward B and in patients admitted for >15 days for patients in the Ward A historical control.

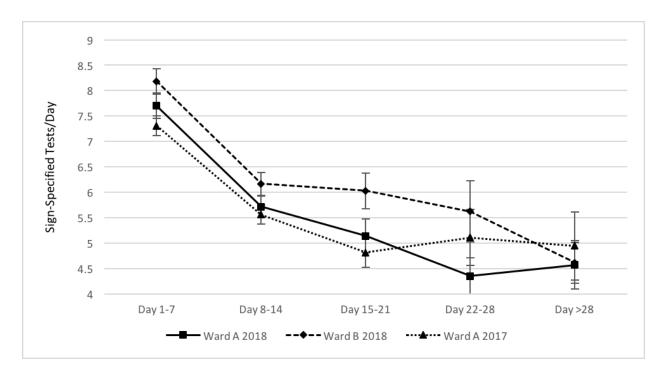


Figure 3. Reductions in "sign-specified tests"/patient-day were noted in patients admitted >8 days for patients admitted to Ward B and in patients admitted for >15 days for patients in the Ward A historical control.

TABLES

	Ward A 2018 (Intervention) n = 526 Patient Days = 5902	Ward B 2018 (Control) n = 522 Patient Days = 5786	Ward A 2017 (Control) n = 597 Patient Days = 6098		
Age (years) μ (σ)	61.9 (18.5)	63.0 (17.7) p = 0.97	64.4 (18.0) p = 0.92		
Gender M/F (%)	50.1/49.9	55.3/44.7 p = 0.10	49.6/50.4 p = 0.86		
LOS (days) μ (σ)	11.2 (10.8)	11.1 (10.8) p = 0.99	10.2 (9.3) p = 0.94		
Admission Hgb (g/L) μ (σ)	116 (26.4)	113 (24.8) p = 0.93	116 (26.5) p = 1.00		
Δ Hgb (g/L) μ (σ)	15.6 (14.8)	15.5 (15.1) p = 1.00	14.0 (13.5) p = 0.94		
Diagnosis (%)					
Cardiac	9.3	9.4	8.9		
GI	10.5	8.4	13.7		
GI Bleed	5.9	5.4	5.9		
Resp	17.3	20.9	17.9		
Malignancy	4.6	3.1	3.5		
Infection	16.3	12.8	14.4		
Neurologic	12.2	13.6	10.4		
Hematologic	3.2	1.9	2.2		
Renal	4.9	4.8	5.2		
Endocrine	3.2	3.3	3.4		
Deconditioning	3.0	2.5	3.7		
Other	9.5	14.0 p = 0.03	10.9		

Table 1. Baseline clinical and demographic data for the three wards. There were no significant differences between any of the wards, with the exception that Ward B had slightly more patients with an "other" diagnosis.

	Ward A 2018 (Intervention) n = 526 Patient Days = 5902	Ward B 2018 (Control) n = 522 Patient Days = 5786	Ward A 2017 (Control) n = 597 Patient Days = 6098
Total tests/day μ (σ)	7.38 (4.08)	8.20 (4.34) p < 0.01	7.80 (4.24) p = 0.09
Sign-specified tests/ day μ (σ)	6.43 (3.56)	7.15 (3.72) p < 0. 01	6.42 (3.63) p = 0.96
CBC/day μ (σ)	0.80 (0.35)	0.86 (0.30) p < 0.01	0.81 (0.38) p = 0.65
"Chem 7"/day μ (σ)	0.87 (0.46)	0.96 (0.47) p < 0.01	0.88 (0.46) p = 0.72
≥1 CBC/day	36.1%	42.5% p = 0.04	38.4% p = 0.46

Table 2. Among all patients, compared to Ward B, patients on Ward A underwent significantly fewer tests and were less likely to average ≥1 CBC/day. Patients on Ward A underwent fewer tests compared to the Ward A historical control, but this did not reach statistical significance.

	Ward A 2018	Ward B 2018	Ward A 2017
	(Intervention)	(Control)	(Control)
	n = 289	n = 278	n = 308
	Patient Days = 3949	Patient Days = 3615	Patient Days = 3825
Total tests/day	6.14 (3.14)	6.96 (3.07)	6.81 (3.52)
μ (σ)		p < 0.01	p = 0.01
Sign-specified tests/day μ (σ)	5.46 (2.83)	6.27 (2.86) p < 0.01	5.56 (2.78) p = 0.66
CBC/day	0.73 (0.31)	0.81 (0.29)	0.74 (0.30)
μ (σ)		p < 0.01	p = 0.69
"Chem 7"/day	0.78 (0.33)	0.90 (0.38)	0.80 (0.34)
μ (σ)		p < 0.01	0.47
≥1 CBC/day	23.2%	32.0% p = 0.02	26.0% p = 0.45

Table 3. Among patients with LOS between 7-30 days, patients on Ward A underwent significantly fewer tests compared to both Ward B and the Ward A historical control

Incorporating Resource Stewardship through the Lens of Evidence Based Medicine (EBM) into the University of Alberta (UofA) Medical Education Curriculum

Authors: Goetz V., Love B.

Synopsis of the University of Alberta (UofA) Initiative

The main goals were 1) enhance training in EBM to increase student understanding and confidence and 2) Apply
principles of EBM to case based activities that integrate Choosing Wisely Canada (CWC) recommendations for
resource stewardship.

Summer Studentship

- A first year medical student was chosen to perform a summer studentship with the undergraduate medical education office to evalute the current EBM curriculum and make reccomendations for improvement.
- •The chosen student was also a CWC student interest group leader.

Tagging and

- A tagging and mapping project identified how well existing EBM instruction met objectives at a level required by national competencies (The Royal College of Physicians CanMeds framework and the Licentiate of the Medical Council of Canada).
- Twenty one competencies relevant to EBM were identified. The EBM curriculum as a whole was then mapped by a review of content.
- Mapped EBM curriculum was then compared to the 21 competencies to elicit how well competencies were covered.

Project Analysis

- Curriculum covered on average 80% of the national competencies relevent to EBM.
- Competencies involving appraisal and integration of evidence had limited coverage, and competencies related to lay communication of evidence were not covered.
- The tagging and mapping process informed the development of new content to operationalize competencies with limited coverage in curriculum.

Content

- Content deficits were addressed through the creation of new curriculum that integrated CWC recommendations into casedbased activities as a platform for practicing integration and communication of EBM.
- Team Based Learning (TBL) sessions focused on principles of diagnosis and screening, integrating CWC guidelines from family medicine, gastroenterology and respiratory medicine.
- Communications cases were designed to provide students practice with evidence based shared decision making. Cases were based on the CWC Antimicrobials Campign and recomendations for radiology.

Implementation & Evaluation

- Two TBL sessions and two communications cases have been implemented into curriculum for 1st and 2nd year MD students.
- Preliminary results of online surveys and evaluations demonstrate that after the implementation, students' understanding of and confidence using principles of EBM to approach resource stewardship increased.

Factors Attributing to its Success

- The ability to have a full-time summer student position to develop and launch the initiative allowed for efficient implementation in the fall and provided a framework for the other members of the UofA CWC Student Interest Group to build upon.
- Aligning the mandate of the CWC Student Interest Group to improve knowledge of resource stewardship with the
 priorities of the faculty to improve EBM instruction helped procure faculty support and resources.

Future Directions and Advice to Others

- The Student Interest Group will keep building upon the EBM curriculum map to further identify areas for improvement
 and integration of CWC content. Areas that have been identified for further case based implementation of
 recommendations include Discovery Learning sessions and the Longitudinal Clinical Experience.
- Others institutions may choose to use the curriculum mapping approach described to identify optimal ways to integrate resource stewardship into an already expansive curriculum.



Towards Collective Intelligence with a CMA Community of Raters

Top POEMs of 2016 Consistent with the Principles of the Choosing Wisely Campaign

ROLAND GRAD, MD, MSc, McGill University, Montreal, Quebec, Canada MARK H. EBELL, MD, MS, University of Georgia, Athens, Georgia

A challenge in the Choosing Wisely campaign is to identify low-value clinical actions supported by high-quality evidence. We applied a method based on crowdsourcing the Daily POEM (patient-oriented evidence that matters) to identify low-value clinical actions from research studies consistent with the principles of Choosing Wisely. In 2016, we analyzed an average of 1,382 questionnaires on 265 unique POEMs delivered to physician members of the Canadian Medical Association. From these questionnaires, we identified the POEMs ranking highest on one questionnaire item directly linked to reducing overdiagnosis or overtreatment. The recommendations from these POEMs based on primary research or meta-analyses are presented as actions to consider avoiding in clinical practice. These recommendations fall into the categories of musculoskeletal conditions (e.g., degenerative meniscal tears, chronic low back pain), cardiovascular disease (e.g., chronic stable angina, heart failure with preserved ejection fraction), respiratory disease (e.g., pneumonia, asthma exacerbations), and preventive care (e.g., screening for lung, colorectal, or ovarian cancer). Based on the results of the studies, these recommendations describe interventions whose benefits are not superior to other options, are sometimes more expensive, or put patients at increased risk of harm. Knowing more about these POEMs and their connection with the Choosing Wisely campaign will help clinicians and their patients engage in conversations better informed by high-quality evidence. (Am Fam Physician. 2017;96(4):234-239. Copyright © 2017 American Academy of Family Physicians.)



These authors conducted a mixed methods study in which they compared the duration of cough reported in a systematic review of the published literature with perilent's expectations of cough duration in patients not receively antibiotics, they searched MEDLINE and the inflerence list of the most recent Cochrane review of artibiotics for excise benchist. They obtained their desid fairth on between studies and from the plectach-related review of artibiotics of scale benchist. They obtained their desid fairth on between studies and from the plectach-related received in the studies with the scale and the studies with the plectach related to receive a sea of search studies and the scale and the plectach-related received and the scale studies with between 23 and 1230 patients. The mean duration of any cough was 17.6 days (range = 13.3 – 174), in contrast, the 435 autroy responsions (44% response rate) expected the duration of cough to be from 5 days 10.7 days. Extensive who was a sea of the production of the scale and the scale an







Teaching the Future Leaders in High Value Care (HVC) Lessons learned from HVPAA Future Leaders program

Largest national GME HVC curriculum in US

1 Year Program

7 Curriculum Directors





Smaller groups with similar Q/I projects mentored by each director



Web based Modules from IHI, Cost of care and Dell Medicine for didactics



Monthly Phone call meeting



Trainees attend
National HVPAA
conference for free



74/76 trainees completed the programs



Self Reported Improvement in attitudes and Skills to provide HVC

Curriculum Directors: Remus Popa, Kencee Graves, Robert Fogerty, Chris King, Kshitij Thakur, Venkata Andukuri



Quality of Care NL/Choosing Wisely NL Academic Detailing

To engage further with family physicians on guidelines, recommendations and best practices, QCNL/CWNL launched an Academic Detailing program to encourage conversation between peer physicians.

Methodology

- 1. In Spring 2017, QCNL/CWNL delivered Academic Detailing to every clinic in the Eastern Health Region, based on the contents of Practice Points Volume 1.
- 2. In Fall 2017, QCNL/CWNL expanded the program. QCNL recruited Family Doctors as Clinical Leaders to assist in delivering Academic Detailing sessions throughout the Eastern region and CME credits were offered to family physicians that attended inclinic Academic Detailing sessions. Detailing was based on Practice Points Volume 2.
- 3. Throughout Fall 2017 and Winter 2018, 12 Clinical Leaders held 26 accredited Academic Detailing sessions in-clinic for 97 family physicians. Those in attendance were provided hard copies of Practice Points Volume 2, as well as any available personal ordering data from QCNL/CWNL projects. For family physicians that could not attend an in-clinic session, a hard copy of their personal ordering data was delivered personally to the clinic by a Clinical Leader.

Program Expansion

In Fall 2018, Academic Detailing will expand to engage all clinicians in all regions of the province. Clinical Leaders will be recruited to assist in delivering in-clinic sessions and web meeting technology will be used to enable discussion. Detailing will be based on the contents of Practice Points Volume 3.

BECOME A CLINICAL LEADER!

Are you a Clinician? Do you have an interest in making sure the right treatment gets to the right patient at the right time? Join our team of Clinical Leaders!

For more information, visit qualityofcarenl.ca or email, pparfrey@qualityofcarenl.ca